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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,565	09/26/2000	Yoshinori Rokugo	Q60968	3204

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EXAMINER	
NGUYEN, ALAN V	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/669,565	ROKUGO ET AL.	
	Examiner	Art Unit	
	Alan Nguyen	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22 and 24-26* is/are rejected.

7)☒ Claim(s) *23,27 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 30 April 2004 under 37 CFR 1.131 has been considered but is ineffective to overcome the reference.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Doshi et al (US 5,936,965) hereinafter Doshi.

Regarding **claims 1 and 12** Doshi discloses a transmission method and system comprising:

transmitting a plurality of packets in multiplexing manner **("a method and apparatus supporting the transmission of multiple application layer protocols multiplexed over a single bitstream for transmission over a single link", column 2, lines 5-8. The single link in Doshi's embodiment is called multi-protocol over a bytestream, MOB)**, which header in each packet includes a first field holding a signal indicative of a packet length **(Doshi uses a scheme where all of the different formats are processed and converted as**

asynchronous block multiplexing protocol data units (ABM PDUs). Referring to column 5 lines 27-42 of Doshi, a length indicator field is included. Doshi states that the length of the packet must be known, and a length indicator field will be attached to packets that do not show its length, such as VL packets that utilized a flag-demarcation system. ATM packets and VL packets that contain a length header already show a length indication field. Thus, there must be some form of indication of packet length in the MOB data unit), a second field holding a signal indicative of a preferential order upon transferring the packet **(column 6, lines 48-51 discloses that preferential order, which is calculated prior to conversion into ABM PDUs, is based on the delay sensitivity of the packet. Therefore, the header of each packet must contain information in regard to packet type. Column 9 lines 49-51 discloses that the entire packet is retained and inserted into the ABM payload and appended with an ABM header, thus retaining the original header that contained the delay sensitivity field; Referring to column 7 lines 53-67 and column 8 lines 1-9 of Doshi, a multiplexing priority is used (field 2). To clarify, different priorities are given to each type of packet. Column 4 lines 55-62 indicate that MOB supports different quality of service (QoS) requirements. There must be a field in the MOB data unit that indicates priority in order for transmitter 105 and receiver 108 to process the data units)**, a third field holding a signal indicative of a kind of traffic **(figure 2B, element 232 shows a type field)**, a fourth field holding a signal indicative of a header length **(column 6, lines 29-32 discloses the**

variation of the ABM header length 'h' based on the desired level of error protection. In order for the transmitter to calculate PDU length for transmission over the MOB bytestream, the header length must be known. Column 11, lines 28-30 discloses the method of calculation using the value of the header length. Therefore, a header length value must be stored and accessed for each protocol data unit), a fifth field holding a control signal depending upon the kind of traffic **(figure 2B, element 234 shows a reserved field that can be used as a type of control signal)**, and a sixth field holding a signal indicative of a result of CRC operation of the header **(figure 2B, element 236 shows a detection CRC field)**, a payload holding information signal depending upon kind of the traffic and a signal indicative of a result of CRC operation of the payload **(ABM payload, figure 2B, element 220)**. Further regarding claim 12, Doshi discloses:

a relay node **(transmitter, figure 1, element 105)** outputting the packet to an output path depending upon the destination address or a label added to the packet ***(elements 112-1 to 112-n)***received from the transmitting portion ***(HPPL, element 110; column 2, lines 24-26 discloses that each channel of ATM, STM, and VL packet units are queued and processed at the HPPL)***; and

a receiving portion ***(receiver, element 108)*** separating the packet received from the relay node and inputting to a switching equipment, an asynchronous transmission mode switch or internet protocol router after performing a predetermined speed changing process ***(column 6, lines 10-18 discloses the receiver demultiplexing the ABM PDUs and reconstructs***

them back to their original bytestream. They are then transported to their respective higher application layer. It is inherent that the receiver portion must have means of speed changing since it is able to demultiplex the ABM bytestream into the original ATM, STM, and VL packet bytestreams).

Regarding **claim 2 and 13**, with the features of parent claim 1 and 12 addressed above, respectively, Doshi discloses where the traffic is one or more kinds among a synchronous transmission mode, asynchronous transmission mode and internet protocol ***(column 4, lines 49-54 discloses \ the system supports a variety of protocols including ATM, IP, and STM)***.

Regarding **claim 3 and 14**, with the features of parent claim 1 and 12 addressed above, respectively, Doshi discloses a payload that has a maximum length ***(column 3, lines 12-16 discloses that in the case of carrying ABM payloads where the majority of the packets being transmitted are ATM packets, the maximum payload length is 53 bytes)*** and a variable length ***(column 2, lines 33-36 discloses in the case where the majority of the packets being transmitted are IP packets, the number of payload bytes is variable)***.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the

invention was made.

5. Claims 4-9, 11, 15-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Endo (US 6,377,574).

Regarding **claims 4 and 15**, with the features of parent claim 2 and 13 addressed above, respectively, Doshi discloses a header used in the packet for transmitting a synchronous transmission mode signal ***(column 7, lines 40-42 discloses that the appropriate header is appended to the STM frames)***. Regarding **claims 5 and 16**, Doshi discloses a field reserved for future use ***(figure 2B, element 234 shows a reserved field)***, and a header used in the packet for transmitting a asynchronous transmission mode signal ***(column 9, lines 1-5 discloses that the ABM header is appended to the ATM ABM payload)***. Regarding **claims 6 and 17, and 7 and 18**, Doshi discloses a field reserved for future use ***(figure 2B, element 234 shows a reserved field),*** and discloses a header used in the packet for transmitting an internet protocol signal ***(column 9, lines 65-67 discloses that the ABM header is appended to the variable length (i.e. IP) frames).***

Doshi fails to expressly disclose a fifth field that consists of a field holding a signal indicative of a destination address, a field holding a signal indicative of a sender address, a field holding a remote alarm indicative of an alarm condition in a remote station, and a field holding a remote monitor indicative of a signal receiving condition of the remote station. Furthermore, regarding claims 5 and 16, Doshi fails to expressly disclose a fifth field that consists of a field holding a signal indicative of a destination address, a field holding a signal indicative of a

sender address and a field reserved for future use. Furthermore, regarding claims 6 and 17, and 7 and 18, Doshi fails to expressly disclose a fifth field that consists of a field holding a signal indicative of a label and a field reserved for future use, and holding a signal indicative of a destination address and a field holding a route information and an identifier for controlling traffic class and flow spreading.

Endo, however, teaches a packet switch which transfers packets between line interfaces that contains a field ***(shown as prior art in figure 3)*** holding a signal indicative of a destination address, a field holding a signal indicative of a sender address ***(column 2, lines 2-5 discloses that a source address and destination address is included in each packet)***, a field holding a remote alarm indicative of an alarm condition in a remote station ***(column 7, lines 64-66 discloses a field containing an Alarm Indication Signal)***, and a field holding a remote monitor indicative of a signal receiving condition of the remote station ***(column 7, lines 65-67 discloses a field containing an Remote Defect Indication Signal, meaning that it can determine an error in a remote station)***. Regarding claims 6 and 17, Endo discloses a field holding a signal indicative of a label ***(column 1, lines 54-55 discloses the use of a protocol identifier (PID), for classification of the packet that is used as information for routing)***. Regarding claims 7 and 18, Endo discloses a field holding a route information and an identifier for controlling traffic class and flow spreading ***(column 2, lines 7-9 discloses a GFC field which is a general flow control information used to prevent conflict, or traffic between cells on a bus of the***

ATM switch).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Doshi's apparatus to have the feature of including source/destination fields, remote alarm fields, identification fields, and control fields into the header field, as taught by Endo. The motivation is a more reliable and accurate system of interfacing, since this header scheme complies to ITU-T (International Telecommunication Union-Telecommunication Standard) recommendation I.363, as explained by Endo on column 1, lines 45-58.

Regarding **claims 8 and 19**, with the features of parent claim 4 and 15 addressed above, Doshi, as modified, discloses the header further includes a extendable field by option following the sixth field ***(column 6, lines 28-32 discloses the optional use of an error protection field 216 in figure 2A)***.

Regarding **claims 9 and 20**, with the features of parent claim 1 and 13 addressed above, respectively, Doshi, as modified, discloses where the multiplexed packet further includes stuff bytes ***("unused ABM PDU transport bytes are padded to completely fill the unused space", column 14, lines 1-3)*** for maintaining a period of the multiplexed packet.

Doshi further fails to expressly disclose where the multiplexed packet further includes an OAM packet used for maintenance of a network and management of operation.

Endo, however, teaches where the multiplexed packet further includes an OAM packet used for maintenance of a network and management of operation ***(column 2, lines 14-19 discloses the use of an OAM cell as a network***

management functioning group).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Doshi's apparatus to have the feature of including OAM packets as a network management functioning group in the transmission system, as taught by Endo. The motivation is a more reliable system that is less prone to error. The use of OAM packets provides error management and resource management, as disclosed by Endo on column 2, lines 52-55.

Regarding **claims 11 and 22** with the features of parent claim 9 and 20 addressed above, respectively, Doshi, as modified, discloses where the stuff byte and the packet length are converted into a complete representation system with taking a predetermined offset as a law for preventing them from generating continuous "O" ***(column 14, lines 20-24 of Doshi discloses that the protocol unit and the padding are used to calculate overall size before being multiplexed and appended with the header)***.

Regarding **claims 24 and 26**, with the features of parent claim 20 addressed above, Doshi, as modified, discloses where the relay node comprises a packet synchronization circuit establishing synchronization of the packet using the result of CRC operation of the header included in the packet per input path and the stuff byte ***(column 14, lines 20-24 of Doshi discloses that the protocol unit, the CRC field, and the stuff byte are used to synchronize to the PDU boundary)***, a physical phase/data integrated switch determining an output path of each packet with reference to the destination address or label in

the header of the packet, and a packet frame forming portion for re-forming a frame of the packet using the stuff byte ***(column 6, lines 10-18 discloses the receiver demultiplexing the ABM PDUs and reconstructs them back to their original bytestream. They are then transported to their respective higher application layer. It is inherent that the receiver portion must have means of speed changing since it is able to demultiplex the ABM bytestream into the original ATM, STM, and VL packet bytestreams)***.

6. Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Endo in further view of Tomooka et al (US 2002/0024699) hereinafter Tomooka.

Regarding **claims 10 and 21** with the features of parent claim 9 and 20 addressed above, respectively, Doshi, as modified, discloses where the OAM packet consisted of a first holding a remote alarm indicative of alarm condition in the remote station ***(column 7, lines 64-66 discloses a field containing an Alarm Indication Signal)***, and a field holding a remote monitor indicative of the signal receiving condition in the remote station ***(column 7, lines 65-67 discloses a field containing an Remote Defect Indication Signal, meaning that it can determine an error in a remote station)***.

Doshi fails to disclose where the OAM packet is consisted of a field holding a byte for automatic protection switch, a field holding an order wire, and a field holding a data communication channel.

Tomooka, however, teaches the use of increased surveillance and

maintenance in his transmission system. Tomooka discloses where the OAM packet is consisted of a field holding a byte for automatic protection switch ***(field [0091], table 2 discloses the use of an APS byte)***, a field holding an order wire ***(field [0101], lines 9-11 discloses a field for order wire)***, a field of holding a data communication channel ***(field [0101], lines 9-11 discloses a field for a data communication channel, DCC)***.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Doshi's apparatus to have the feature of including OAM packets as a network management functioning group in the transmission system, such as an APS byte, order wire, and a data communication channel, as taught by Tomooka. The motivation is a more reliable system that is less prone to error. The use of OAM packets provides error management and resource management, as disclosed by Tomooka on field [0092], lines 1-5.

7. Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi in view of Endo in further view of Padovani et al (US 6,574,211) hereinafter Padovani.

Regarding **claim 25** with the features of parent claim 24 addressed above, Doshi, as modified, further fails to expressly disclose where the packet synchronization circuit uses X16 + X12 + X5 + 1 as generating polygonal expression in said CRC operation of said header.

Padovani, however, teaches in his data transmission system where the

packet synchronization circuit uses X16 + X12 + X5 + 1 as generating polygonal expression in said CRC operation of said header ***(column 24, lines 6-11 discloses that the predetermined generator polynomial for CRC operation is X16 + X12 + X5 + 1)***.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Doshi's apparatus to utilize a predetermined generator polynomial for CRC operation, such as X16 + X12 + X5 + 1, as taught by Padovani. The motivation is a more reliable system that is less prone to error. This polynomial provides error detection over all bits transmitted, as disclosed by Padovani on column 24, lines 14-17.

Response to Arguments

8. Applicant's arguments filed on February 2, 2004 have been fully considered but they are not persuasive. In response to the Office action, regarding **claims 1 and 12,** Applicant argues that the "header" of the packet is not clearly defined and reference to the higher layer protocol data unit PDU as the packet. Applicant also argues that fields 1 and 2 are not consistent with fields 3-6. The examiner respectfully disagrees. According to column 5 lines 5-20 of the Doshi reference (US 5,936,965), the processing of the packets through all three layers, including the preparations of the packet at the high layer PDU preparation layer (HPPL) and the appending of the common header at the ABM layer, together, form a MOB data unit. The MOB data unit holds many types of packets, including STM, ATM and variable length packets. Therefore changes to all

packets done at the HPPL layer are maintained when outputted at transmitter 105 of figure 1. The MOB data unit includes both a common header and an original header of each packet that both contain fields that are significant to the transmission of the data unit. Referring to column 5 lines 27-42 of Doshi, a length indicator field (field 1) is included. Doshi states that the length of the packet must be known, and a length indicator field will be attached to packets that do not show its length, such as VL packets that utilized a flag-demarcation system. ATM packets and VL packets that contain a length header already show a length indication field. Thus, there must be some form of indication of packet length in the MOB data unit. Referring to column 7 lines 53-67 and column 8 lines 1-9 of Doshi, a multiplexing priority is used (field 2). To clarify, different priorities are given to each type of packet. Column 4 lines 55-62 indicate that MOB supports different quality of service (QoS) requirements. There must be a field in the MOB data unit that indicates priority in order for transmitter 105 and receiver 108 to process the data units. Restating, the MOB data unit includes both a common header and an original header of each packet that both contain fields that are significant to the transmission of the data unit and are both utilized for information. The disclosure in the Doshi reference explained above still read on claims 1 and 12. Applicant needs to further clarify the limitations of claims 1 and 12 to overcome the reference. The Examiner asks to take the disclosure of the Doshi reference in its entirety as prior art.

In response to the Office action, regarding **claims 4, 5, 15, and 16,** the applicant argues that the Examiner fails to provide a motivation or suggestion to include a field holding a signal indicative of a destination address, source address, and remote alarm indicative of a signal receiving condition of a remote station. There is a suggestion for the need of a reliable and accurate system that is less prone to errors and complications. This need is taken in a general sense that the data units of Doshi's embodiment are multiplexed data packets. Issues of packet loss and timing errors arise. The Doshi reference does not go into detail about data integrity measures The Doshi reference takes an illustrative but not exhaustive embodiment. Refer to column 4 lines 46-67 and column 5 lines 1-4.

In response to the Office action, regarding **claims 8 and 19,** the applicant argues the error protection field 216 shown on figure 2A of Doshi would clearly not follow the sixth field as the extendable field as stated in the claims, since the sixth field is the error correction/detection CRC 236 as shown in figure 2B. Doshi discloses on column 6 lines 25-67 that both fields could be utilized. Both fields are shown in the same data unit in figure 2A, meaning they serve different purposes.

In response to the Office action, regarding **claims 9, 10, 20, and 21,** the applicant argues that the Examiner fails to provide a motivation or suggestion to use an operation/maintenance packet in Doshi's apparatus. The Examiner respectfully disagrees. There is a suggestion for the need of a reliable and accurate system that is less prone to errors and complications. The

operation/maintenance functions are used for data packets that are taken in a general sense. The data units of Doshi's embodiment are also multiplexed packets. Issues of packet loss and timing errors arise. The Doshi reference does not go into detail about data integrity measures. The Doshi reference takes an illustrative but not exhaustive embodiment. Refer to column 4 lines 46-67 and column 5 lines 1-4. The Endo reference discloses examples such as flow control and header error control of packets, as disclosed on column 2 lines 7-14 and column 3 lines 22-42.

It is concluded that the Doshi reference and the Doshi in view of Endo combination reference continue to anticipate the claimed subject matter. Therefore the claims are not allowed over the prior art.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Nguyen whose telephone number is 703-305-0369. The examiner can normally be reached on 9am-6pm ET

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVN
July 2, 2004

JOHN PEZZLO
PRIMARY EXAMINER